

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* STEPHEN F. GASS, DAVID A. FANNING,  
DAVID S. D'ASCENZO, JOEL F. JENSEN,  
SUNG H. KIM and ANDREW L. JOHNSTON

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Appeal 2007-2769  
Application 09/929,242  
Technology Center 3700

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Decided: August 29, 2007

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Before WILLIAM F. PATE III, TERRY J. OWENS, and  
JENNIFER D. BAHR, *Administrative Patent Judges*.

WILLIAM F. PATE III, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

This is an appeal from the final rejection of claims 1 and 5. Claims 19-24 stand allowed. These are the only claims in the application.

We have jurisdiction over the appeal pursuant to 35 U.S.C. §§ 6 and 134.

The claimed invention is a table saw or the like which has a blade for cutting wood. The table saw has both a detection system for detecting

contact between a person and a cutting tool, and a reaction system which retracts the cutting tool away from the cutting region and stops the rotation of the blade.

Claim 1, reproduced below, is further illustrative of the claimed subject matter.<sup>1</sup>

1. A woodworking machine having a cutting region for cutting workpieces, comprising:

a movable cutting tool for cutting workpieces in the cutting region;

a detection system adapted to detect contact between a person and the cutting tool; and

a reaction system associated with the detection system and the cutting tool, where the reaction system is configured to retract the cutting tool at least partially away from the cutting region upon detection of contact by the detection system.

The references of record relied upon by the Examiner as evidence of obviousness are:

Friemann	US 3,858,095	Dec. 31, 1974
Terauchi	US 4,512,224	Apr. 23, 1985
Hauer (as translated)	DE 196 09 771 A1	Jun. 04, 1998

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<sup>1</sup> It is noted that “the rotation” and “the blade” of claim 5 have not been previously recited and lack clear antecedent basis from claim 1.

Claim 1 stands rejected under 35 U.S.C. § 103 as unpatentable over Hauer in view of Friemann.

Claim 5 stands rejected under 35 U.S.C. § 103 as unpatentable over Hauer in view of Friemann and Terauchi.

### ISSUES

The sole issue for our consideration in this appeal is whether the Appellants have established, by a preponderance of the evidence, that the Examiner erred in rejecting claims 1 and 5 for obviousness.

### FINDINGS OF FACT

Hauer discloses a table saw with several safety features. The feature of interest is a so-called Theremin system for detecting proximity to the saw blade. The Theremin, a well-known musical instrument, is an oscillator that changes pitch based on its proximity to a body part such as a hand or finger. In this instance, the oscillator is configured to retract the cutting tool when a certain frequency or pitch is detected. Thus, we agree with Appellants that Hauer is generally directed to a proximity system for retracting a cutting tool.

Friemann on the other hand is directed to a protective circuit for use in a band saw. Friemann mentions two prior art attempts to protect the user's hands. The first involves wires that form a protective barrier around the band saw. However, these wires sometimes trap the operator's hand increasing the seriousness of accidents. See col. 1, ll. 14-19. Friemann also discloses a prior art cutter surrounded by light barriers that stop the motor

driving the cutter if a part of the body of the operator should interrupt these light barriers. See col. 1, ll. 21-41. This light barrier disclosed by Friemann as prior art is a proximity system for detecting the presence of the operator near the cutting tool.

Friemann is directed to an arrangement where the band saw is immediately stopped when the cutting band is touched by the operator. As shown in Fig. 2, the band saw 5 runs over insulated guide rollers 6, 7, 8 and drive pulley 9 rotated by motor M. Two take-up rollers 12 contact the band saw and continuously sense the capacitance of the band saw system. When the operator touches the band cutter, the capacitance of the system is thereby changed in such a manner that the bridge circuit 3 becomes unbalanced and rapid braking of the motor M results.

Finally, Terauchi discloses a fabric slitting device with a blade 12 rotated by a first motor M. Motor M1 is used to drive the arbor into and out of the workpiece A. When blade 12 advances too far into the workpiece, not only is blade 12 stopped, but motor M1 is immediately reversed to retract the blade from the cutting area.

## PRINCIPLES OF LAW

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966), the Supreme Court set out a framework for applying the statutory language of §103:

[T]he scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as

commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” *Id.*, at 17-18, 148 USPQ at 467.

While the sequence of these questions might be reordered in any particular case, the factors continue to define the inquiry that controls. If a court, or patent Examiner, conducts this analysis and concludes the claimed subject matter was obvious, the claim is invalid or unpatentable under §103. *See KSR Int’l v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1388 (2007).

Additionally, it is quite apparent that a test for analogousness based on the problem the applicant inventor was faced with is no longer a proper analysis. The Court assigned as error that “the Court of Appeals in this case was to foreclose this reasoning by holding that courts and patent examiners should look only to the problem the patentee was trying to solve (citation omitted). The Court of Appeals failed to recognize that the problem motivating the patentee may be only one of many addressed by the patent’s subject matter. The question is not whether the combination was obvious to the patentee but whether the combination was obvious to a person with ordinary skill in the art.” *KSR* 127 S.Ct at 1742, 82 USPQ2d at 1397.

## ANALYSIS

Taking Appellants’ third argument first, Appellants argue that there is no motivation for one of ordinary skill to combine the references as the Examiner has. It is our finding based upon the disclosure of Friemann, that the saw art recognizes at least two safety systems—one based on sensing

proximity to the cutting device and one based on actual contact with the cutting device. The prior art also recognizes advantages and disadvantages with each of these systems. Friemann specifically states that the proximity system is a disadvantage in some types of cutting, for it continually stops the cutting machine. See col. 1, ll. 39-40. Thus, there is ample evidence for the Examiner's conclusion that some users prefer the rotation of the circular blade be stopped when there is contact between the user and the circular blade, because the user is inclined to guide or push the workpiece to areas very close to the periphery of the circular saw. This enables the user to work around the periphery of the circular saw with a higher degree of flexibility, since the brake mechanism will not be actuated unless there is actual contact between the user and the circular saw. Accordingly, we agree with the examiner's finding that a proximity system and a contact system are art recognized equivalents and interchangeable based on known techniques in the field of cutting machines. Therefore, the use of the contact system of Friemann in the table saw of Hauer is seen to be a simple substitution of one known element for another to obtain predictable results. Such a substitution was likely to have been obvious to one of ordinary skill. See *KSR* at 1731, 82 USPQ2d at 1395.

Stated another way, there are a finite number of identified predictable solutions to provide safety to the operator of a circular saw. One solution is a proximity system and another solution is a contact system. Both of these options are within the technical grasp of one of ordinary skill as shown by the prior art. Accordingly, a table saw with a contact system is not the

product of innovation but of ordinary skill and common sense. See *KSR* at 1742, 82 USPQ2d at 1397.

Appellants also argue that Hauer teaches away from the claimed combination and that the proximity system is in some measure safer than the contact system. As noted above, we are in agreement with the Examiner that these are art-recognized equivalents, and it would have been obvious to substitute a contact system for a proximity system for the Examiner's clearly stated rationale of allowing closer work to the spinning blade. As noted previously, one of ordinary skill in the saw art is fully aware of the trade-offs associated with a proximity or a contact detection system. The choice of which system to use in any given situation is merely applying known techniques to known devices with predictable results. *KSR* at 1740, 82 USPQ2d 1396.

Appellants argue that the Examiner's argument of providing greater flexibility to work is simply a wish for an enhanced product. On the other hand, we see it as a design incentive or a market force compelling a predictable variation on the part of one of ordinary skill. *Id.* at 1740, 82 USPQ2d at 1396. While we agree with the Appellants that the combination provides a less safe saw, this is a mere trade-off when viewed with the possibility of finer detailed work.

Appellants further argue that there is no reasonable expectation that a combination of these references would be successful. We disagree. We agree with the Examiner that the principles of insulation and grounding are well known, and we note that the rollers 12 of Friemann contact the side of the band, not the cutting edge. Rollers or take-offs could obviously contact

the side of the spinning blade of Friemann and a blade could be insulated from the arbor and the table structure by an insulated hub or the like. In short, Appellants are insisting on the bodily incorporation of Friemann into the table saw of Hauer. However, bodily incorporation has never been the standard of obviousness under § 103.

Additionally, Appellants argue a long felt need, but offer no formal evidence that Appellants' saw satisfies any long felt need or is any more successful than the saw of the type of Hauer. In fact, Appellants argue that a contact saw is inherently less safe than a proximity sensing saw. Appellants' anecdotes do not rise to the level of evidence.

With respect to Terauchi, Appellants argue that this reference is from a non-analogous art. The Supreme Court in *KSR* assigned it as error when Courts and Examiners look only to the problem the applicant was trying to solve. The Court stressed that the problem motivating an applicant may be only one of many addressed by the subject matter. Familiar objects may have obvious uses beyond their primary purposes, and in this sense, the teachings from the saw of Terauchi are clearly applicable to the saws of Friemann and Hauer. See *KSR* at 1742, 82 USPQ2d at 1397.

Finally, Appellants argue that there is no motivation or suggestion for combining Terauchi with Friemann and Hauer. We disagree. It is clear to us that Terauchi provides express suggestion for using both a blade brake and a blade retraction in a saw for safety purposes. Thus, one of ordinary skill would have found it obvious to use both mechanisms in a safety device.



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### CONCLUSION

The Examiner's rejections of claims 1 and 5 are affirmed.

AFFIRMED

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